14.

Fulgoroidea (Homoptera) of Kartabo, Bartica District, British Guiana.[1]

Z. P. METCALF

College of Agriculture and Engineering, University of North Carolina.

(Plates I-III).

[This contribution is a result of various expeditions of the Department of Tropical Research of the New York Zoological Society to British Guiana during the years 1917, 1919, 1920, 1921, 1922 and 1924, under the direction of Dr. William Beebe. For maps and ecological data refer to *Zoologica*, Vol. VI, 1925, pp. 1-193.]

CONTENTS.

[1]Contribution No. 715, Department of Tropical Research, New York Zoological Society.

INTRODUCTION.

Dr. William Beebe has asked me to report on the Homoptera taken at the New York Zoological Society's Tropical Research Laboratory at Kartabo, British Guiana. The present collection, while not extensive, does contain many interesting forms and reveals something of the wealth of the tropical jungles which yet await discovery.

In the present report, I have simply given brief notes on the known genera and species. Keys to the families and most of the genera known from the western hemisphere were published recently (Metcalf, 1938a) and need not be repeated here. Known species which have not been illustrated heretofore are illustrated in the present report, and brief diagnostic notes are given on these forms.

This superfamily includes Homoptera which have the head so modified that the antennae are situated below the ventral sinus of the compound eyes. The chief characters for separating the various families are to be found in the modification of the tarsi of the hind legs and in wing venation. Generic characters are found in the modifications of the head, details of wing vena-

tion and the general characters of the male genitalia which are the chief characters for specific determinations.

The present paper is concerned with 103 specimens of fulgorids, which resolve into 39 species. One genus and 10 species are described as new. All were collected at Kartabo, the field station of the Department of Tropical Research of the New York Zoological Society, in a quarter square mile of jungle, at the junction of the Mazaruni and Cuyuni Rivers.

The field numbers and other data are presented in an Appendix at the end of the present paper. All types of new species are deposited in the collections of the Department of Tropical Research, New York Zoological Society.

Family CIXIIDAE.

This is a family of usually small or medium-sized species, mostly dull or inconspicuously colored forms. The family is a large one and is usually well represented in tropical collections; however, the present collection contains only 3 species.

Bothriocera Burmeister, 1835a:156.

Haplotype *Bothriocera tinealis* Burm.

This is one of the most singular of the genera of the family Cixiidae. The head is twisted so that the ventral sinus is directed cephalad and the antennae are in front of the eyes instead of ventral to the eyes as is normal in most fulgorids. The present collection contains specimens of the widely distributed species, *bicornis*. This species has been recorded heretofore in the United States from New Jersey southwestward to Texas through Mexico, Central America to southern Brazil. There has been, however, much confusion in the species in this genus in the past and it is possible that many of the records for this species do not actually refer to *bicornis*.

Oliarus Stål.

Logotype *Oliarus walkeri* Stål.

This is a large genus comprising 232 recorded species. The genus is practically world wide in distribution and perhaps contains many diverse elements and is in need of real revision. Only 4 species have heretofore been recorded from the South American fauna. The present species is somewhat anomalous in this genus but I hesitate to place it elsewhere as it is more closely related to the *Oliarus* complex than to any other known group.

Oliarus beebei, n. sp.

(Pl. I, figs. 1, 2, 3).

This is a large species of *Oliarus* superficially resembling *Oliarus vicarius* Walker, with a much narrower and more produced crown and distinct male genitalia.

General color of the venter excluding the abdomen but including the legs, the head and the pronotum ochraceous tawny, venter of abdomen and mesonotum dorsally cinnamon brown, tegmina translucent, ochraceous tawny with the veins brown and irregular markings of brownish and rows of brownish setigerous punctures in the cells.

Crown narrow, elongate, about 3 times as long as broad; the lateral carinae strongly elevated converging anteriorly and uniting on the face to form the median carina; lateral areolets indistinct; posterior margin broadly rounded, not angularly emarginate. Frons broad, its greatest width about the level of the antennae, much narrower between the eyes; median carina very distinct; median ocellus indistinct. Clypeus deeply inserted in the frons. Pronotum short and broad; posterior margin broadly angled. Mesonotum large; intermediate carinae very indistinct giving the appearance of a tricarinate mesonotum. Tegmina elongate, narrow; apical and subapical cells elongate and narrow, each cell with a single row of setigerous punctures. Male genitalia with the pygofer elongate, deeply inserted in the abdomen; ventral incision nearly a right angle; plates of the pygofer well developed, biramose on the apical third, each process capitate; genital plate rather small, somewhat hatchet shaped, with the basal portion rather broad and with the apical portion with a finger-like process directed mesially; genital styles with the basal third slender, diverging, the apical two-thirds broad and flat, nearly quadrate with the inner angle more acute than the outer angle and extended; aedeagus long and coiled; anal segment long with an obtuse median ventral process; anal style elongate.

Holotype: ♂; Kartabo, Bartica District, British Guiana; March 10, 1924.

Allotype: ♀; Kartabo, Bartica District, British Guiana; March 27, 1922, at light.

Paratype: 3 ♀♀; all from Kartabo, October 8, 1922.

Pintalia Stål, 1862e:4.

Logotype *Pintalia lateralis* Stål.

This genus is composed of about 22 species which have a fairly wide range from southeastern United States, as far north as Virginia; through Mexico, Central America and Brazil, as far south as Rio de Janeiro. The genus may be briefly characterized as follows: the vertex is separated from the frons by two slightly acute transverse carinae which are nearly parallel to each other and are not contiguous on the median line as in some of our common genera;

mesonotum tricarinate; tegmina steeply tectiform with radius 3 to 5 branched and media 5 branched, first medial sector branched at about the same distance from apical margin as second medial sector; the pygofer of the female is fairly robust; the male pygofer is deeply incised posteriorly with a distinct median tooth at the bottom of the incision, the genital plates broadly expanded apically with slender basal petioles, or elongate, narrow.

There is a single male specimen in the present collection which is rather anomalous in this genus, but it comes closer to the genus *Pintalia* than any other genus known to me and I shall include it here for the present.

Pintalia castanea, n. sp.

(Pl. I, figs. 4, 5, 6, 7).

This species may be recognized by its deep chestnut brown color shading to blackish on some of the carina. The lateral margin of the frons is strongly elevated, sharply carinate ventrad and extending as broad elevated ridges which meet in the median line dorsad. The posterior tibiae unispinose.

The crown nearly as long as broad, consisting of two portions, a rather large median anterior areolet which is horizontal and elongate oval in shape and a posterior portion which is nearly vertical and rather narrow and which merges into the strongly elevated lateral carinae which project very high above the eyes. Frons elongate, narrow, nearly three times as long as the greatest width; dorsal margin nearly as wide as clypeal border; the lateral margins strongly elevated, starting as thin carinate lateral margins on the clypeal border, then widening at about the level of the antennae into broad, flat ridges which meet in the median line on the dorsal border; median carina extending about half the length of the face, rather indistinct; median ocellus large, distinct. Clypeus with the median carina very distinct and lateral margins strongly carinate; cheeks very broad. First segment of the antennae very short; second short, terete. Lateral ocelli large, conspicuous, elevated above the level of the cheeks; ventral sinus of the compound eyes wanting. Pronotum very short; posterior margin deeply incised. Mesonotum large, tricarinate. Tegmina elongate, narrow; radius with 5 apical branches; medius with 5 apical branches; the veins finely but distinctly granulate. Posterior tibiae with a single spine on the apical third. Male genitalia elongate, narrow; the pygofer deeply incised caudad with a short triangular median tooth; the genital plates elongate, narrow, widely separated basad, converging and meeting on the middle line for about a fourth of the total length before their middles then converging to their broadly rounded apices; aedeagus elongate, slender, elbowed with a pair of lateral curved hooks which are directed caudad; anal segment elongate with a long narrow ventral process; anal style elongate.

General color rich chestnut brown shading to darker brown on the head; the compound eyes blackish-brown and many of the carinae on the head and thorax narrowly black; legs pale ochraceous yellow; tegmina chestnut brown with the veins darker; abdomen ochraceous yellow. Length to apex of tegmina 6.1 mm.

Holotype: ♂; Kartabo, Bartica District, British Guiana; April 8, 1924.

Family ARAEOPIDAE.

This is a large family of small or very small species. Unfortunately, the present collection contains only a single specimen of the genus *Eucanyra*.

Eucanyra Crawford, 1914a:568.

Orthotype *Eucanyra stigmata* Crawford.

In this genus the head is narrower than the pronotum. The antennae are very long; the first segment terete, subequal to the second segment. Mesonotum quinquecarinate, elongate. The genital style short. Anal segment asymmetrical. The aedeagus elongate and much coiled.

Eucanyra bifurcata, n. sp.

(Pl. I, figs. 8, 15).

This species superficially resembles a small pale *Eucanyra stigmata* Crawford. The crown is broader and somewhat shorter. The face is broader, not so much narrowed between the eyes. The forking of the median carina occurs at about the level of the dorsal margin of the eyes. Male genitalia very distinct; pygofer broader and shorter than in *stigmata*, with distinct genital plates; the ventral angles more pronounced; the anal segment more elongate, narrowed basad with a pair of asymmetrical, but quite distinct, anal spines. The anal style much smaller than in *stigmata*. Genital styles smaller, distinctly bifurcate.

Holotype: ♂; Kartabo, British Guiana.

Family DERBIDAE.

This is a family of small or medium-sized fulgorids with small bodies and delicate, elongate tegmina and wings. The head is usually considerably modified, being frequently very much compressed. The face is often reduced to the lateral, strongly elevated carinae which are contiguous on the median line. The present collection contains representatives of 4 genera and 6 species.

Mysidia Westwood, 1840d:83.

Logotype *Derbe pallida* Fabr., Kirkaldy 1903c:216.

This is a genus of medium or medium small species, of various colors but quite frequently pale or whitish in color. The species are all frail. The male and female genitalia furnish the best characters for the recognition of the species. About 27 species are known, ranging from the southern United States to Brazil. Two species, both of which are fairly common and widely distributed in tropical America, are included in the present collection. These are *Mysidia squamigera* Fabr. and *Mysidia costata* Fabr. *Mysidia squamigera* is one of the larger species of the genus with the tegmina heavily marked with fuscous, especially along the costal border. *Mysidia costata* is a somewhat smaller species with the tegmina milky subhyaline, faintly marked with fuscous along the margin and along some of the cross veins.

Mysidia rubra, n. sp.

(Pl. I, fig. 9; Pl. II, fig. 13).

This is a brilliant scarlet species resembling *rubidella* Ball in color but differing materially in structure.

Dorsal half of the body bright scarlet; ventral half, including legs, bright yellow; tegmina and wings fuscous; veins red.

Crown elongate; lateral margin carinate, nearly parallel; the crown projecting in front of the eyes; posterior margin broadly sinuate. Frons elongate; the carinate side nearly parallel between the eyes, then widening to the broader clypeal border. Clypeus with a distinct median carina. Antennae short, the second joint somewhat capitate. Pronotum short, the posterior margin deeply excavate, the lateral fields broadly, rotundately expanded. Tegmina rather broad and short; the venation characteristic. Genital plates rather narrow, elongate, their bases narrow, widely separated; the outer margin broadly curved; the inner margin angles toward the median line on the basal half and then diverges to the obtuse apices. Aedeagus very elaborate.

Holotype: ♂; Kartabo.

Neocenchrea Metcalf, 1923a:193.

Orthotype *Cenchrea heidemanni* Ball.

This genus may be distinguished by the following characters: head narrow with narrow crown and forehead, both of which have strongly elevated lateral margins and are without a median carina. Antennal foveae on pronotum strongly developed. Tegmina long and narrow; three main veins of corium bifurcate; radius separated from subcosta before the level of the apex of clavus, media branched just beyond the apex of clavus and first cubital sector, branching at about the same level as the union of claval veins.

The 5 species which have been assigned to this genus previously, range from southern United States through Mexico to Panama. The species described below is the first to be recorded from South America proper.

Neocenchrea ochracea, n. sp.

(Pl. I, figs. 10, 11, 13).

There is in the present collection a single specimen of this genus. The specimen represents a species close to *pallescens* Metcalf, but the crown is much narrower and more elongate and the tegmina have the principal cells faintly tinged with ochraceous buff.

General color of the body ochraceous orange; eyes brown; legs ochraceous yellow with the lateral areas of the pronotum and the posterior border of the pronotum ochraceous yellow; tegmina and wings milky subhyaline; the cells of the tegmina marked with ochraceous buff.

Crown narrow, elongate, about two and a half times as long as its greatest width; the lateral margins strongly elevated in broad ridges which are marked off by transverse carinae into small areolets; the lateral margins meeting in the median line at the anterior end of the head. Frons elongate, narrow, the lateral margins strongly elevated in thin carinae; no median carina. Clypeus about half as long as the frons; median carina distinct. Pronotum short and broad, deeply incised posteriorly. Mesonotum large with a faint median carina. Tegmina narrow, elongate; subcosta-radius branching about the middle; media branching beyond the middle and cubitus branching before the middle. The female last genital segments large, broader than long, the median flap very large, nearly circular in outline.

Holotype: ♀; Kartabo, Bartica District, British Guiana, March 4, 1924.

Syntames Fowler, 1905a:138.

Haplotype *Syntames delicatus* Fowl.

This genus can be recognized by the broad, nearly parallel-margined crown and forehead, pronotum with a distinct antennal fovea; tegmina broad; subcostal cell long, with a distinct discal cell from which the 5 or 6 branches of media arise; cubitus bifurcate before the level of the union of claval veins.

This genus contains 9 species which range from the northern United States through Mexico and Central America, with a single

species having been described previously from British Guiana.

Syntames serratus, n. sp.

(Pl. I, figs. 12, 14; Pl. II, fig. 12).

In general coloration this species resembles *brunneus* McAtee, but the genitalia are entirely different. General color of clypeus, the lateral margins of the frons and crown, the pronotum, the tegmina, and the legs, fawn; the central area of the face and crown, the compound eyes and the mesonotum, dark chestnut brown.

Lateral margins of the frons nearly parallel but little widened below; distinctly granulate. Clypeus as long as the frons. Crown not as long as its greatest width, distinctly produced in front of the compound eyes. Pronotum broad, deeply incised posteriorly. Mesonotum large with a distinct median carina. Pregenital plate large, posterior flap rotundately produced, the posterior border finely but distinctly serrate.

Holotype ♀; Kartabo, Bartica District, British Guiana, February 28, 1924.

Anotia Kirby, 1821a:20.

Haplotype *Anotia bonnetii* Kirby.

All the species have very compressed heads, the forehead reduced to a mere keel and the second antennal segment elongate nearly as long as the forehead. The tegmina two or more times as long as the body; with subcosta and radius united for about one-third their length; medius with 4 or 5 branches; cubitus one with 2 branches ending in the extended claval vein. The male genital plates consist of horizontal lamelliform plates usually narrowly ovoid with a vertical ridge on the dorsal surface forming a blunt recurved tooth near the middle.

Seven species of this genus have been described from eastern North America and seven from Central America. There is a single badly mutilated specimen which has the characteristics of *Anotia rubescens* Fowler.

Family FULGORIDAE.

This family contains the largest and most spectacular species of fulgorids. It is in this family that the head reaches its greatest development. In addition to the spectacular species, there are many smaller and more obscure species which have the head but little modified. The present collection contains only 7 species, which are of rather wide distribution and fairly well known.

Cathedra Kirkaldy, 1903b:179.

Haplotype *Fulgora serrata* Fabr.

[*Pristiopsis* Schmidt, 1905b:332].

[Orthotype *Fulgora serrata* Fabr.]

This genus contains but a single remarkable species, *Cathedra serrata* Fabricius, which has a wide distribution in northern South America and Central America, having been definitely recorded from Costa Rica, Colombia, Surinam, French Guiana, Peru and Brazil as far south as Sao Paulo. There is in the present collection a single specimen of this species from Bartica, British Guiana. *Serrata* may be recognized by the elongate cephalic process which has a row of stout spines, 8 or 9 in number, along each dorso-lateral margin. In addition there is a pair of dorsal spines at the base of the middle third of the cephalic process and another pair at the base of the apical third of the cephalic process. The general color of the venter including the legs, the dorsal part of the cephalic process, the pronotum, mesonotum, and tegmina, is ochraceous tawny marked with fuscous and black, especially on the margins of the spines on the cephalic process. The hind wings are chiefly dusky brown irrorate with creamy white basad and with a large circular spot of deep chrome yellow at the apex of the anterior area; the venation is chiefly black in the darker areas of the hind wing, but dark yellow in the yellow spot; the dark areas are more or less varied with pale bluish-white. Total length of the body to the tip of the abdomen 54 mm; of the cephalic process 25 mm; wing expanse 98 mm.

Fulgora Linnaeus, 1767a:703.

Logotype *Fulgora laternaria* Linnaeus.

This genus is also represented by a single specimen which I assigned to the species *Fulgora laternaria*. This genus may be recognized by the inflated cephalic process which gives the head of this insect a superficial resemblance, especially in side view, to the head of an alligator. The species *laternaria* has been recorded from Mexico, Central and South America, although it is probable that Mexican and Central American records refer to the closely related species *servillei*. The species *laternaria* may be distinguished from the closely related species by the fact that the cephalic process at its greatest width is nearly equal in width to the pronotum, and by the fact that the posterior ocellated spot on the hind wing is large, not small and punctiform as it is in the other closely related species.

Aracynthus Stål, 1866a:136.

Logotype *Fulgora sanguinea* Oliv.

This is another genus that contains but a single species. It may be readily recognized by the following characters: the head narrow, about half as wide as the pronotum. The crown broad and short, nearly three times as broad as long. The frons broad ventrad, narrowing between the eyes; the median carina bifurcates almost from the

clypeal margin and the 2 branches unite with the intermediate carina in a large callosity at the dorsal margin of the frons. The frons slightly reflexed on the dorsal surface. The tegmina elongate, narrow, the costal area broad and reticulate and the costal margin somewhat sinuate.

Aracynthus sanguineus Oliv.

The species *sanguinea* may be recognized by the general tawny color of the venter, including the legs, the head, pronotum, mesonotum, and tegmina. Each hind wing has its base bright red, rather heavily marked on most of the veins and cross veins with black. The apical area is fuscous with irregular translucent spots. Total length to apex of abdomen 24 mm.

Lystra Fabricius, 1803a:56.

Logotype *Lystra lanata* Linnaeus.

This genus may be recognized by the following points: frons nearly quadrate, the lateral margins strongly, broadly carinate, with median and intermediate carinae, the latter diverging strongly from the clypeal border. Crown short and broad, the lateral margin being elevated into a pair of strong teeth above the eyes. Pronotum short and broad with a pair of short, stout teeth behind the eyes. Tegmina long and narrow. Legs long and slender. This genus is represented in the South American fauna by 2 common species and a number of rare forms. The present collection contains only the species known as *lanata* Linnaeus. In this species the general color of the body and tegmina is black with the lateral margin of the clypeus and forehead and crown orange red. The tegmina black with 2 broad stripes along the commisural margin pale bluish-green, and the general surface of the tegmina irregularly spotted with the same color. Hind wings fuscous brown; the veins chiefly black. In well preserved specimens the abdomen of the female terminates in long, white, waxy filaments.

Calyptoproctus Spinola, 1839a:266.

Logotype *Lystra stigma* Fabr.

Nine species recorded from North, Central and South America are at present included in this genus. They are chiefly dull colored, inconspicuous species with total lengths to the apex of the tegmina varying from 10 to 20 mm. Crown about four times as broad as long, nearly parallel margined. The frons broad, distinctly ampliate dorsad. The tegmina relatively long and narrow. The sixth abdominal segment produced, nearly as long as the first five segments of the abdomen combined; tricarinate, the carinae parallel.

There are in the present collection 3 specimens, all females, which apparently represent 2 species. One of these I identify as *elegans* and the other as *marmoratus*. For the guidance of other students, I include a tentative key to the species of this genus. This key is based chiefly on color characters as 2 of the species are unknown to me in nature. The key will have to be revised before it is in satisfactory shape and the color characters correlated with structural characters. However, it may serve as a guide to our present knowledge of these species.

Key to the Known Species of *Calyptoproctus* Spin.

1. Hind wings transparent, veins only darker 2
1. Hing wings not entirely transparent, colored on the base at least 6
2. Dorsum of abdomen uniformly colored 3
2. Dorsum of abdomen not uniformly colored 4
3. Tegmina grayish, reddish toward the base. Dorsum of abdomen ochraceous . . . *guttipes* Walker 1858b: 50 (Mexico)
3. Tegmina subhyaline, with a narrow indistinct fuscous fascia before the middle and the veins sparsely fusco-punctate. Dorsum of abdomen black . . . *exsiccata* Stål, 1854b: 245 (Brazil)
4. Frons with a median black vitta. Lateral areas of the abdominal segments marked with greenish-yellow . . . *confusus* Distant, 1906m:195 (Mexico and Guatemala)
4. Frons not vittate with black 5
5. Basal third of tegmina grayish-green. Frons marmorate . . . *marmoratus* Spinola, 1839a:271 ("North America")
5. Basal third of tegmina reddish. Frons not marmorate . . . *elegans* Olivier, 1791a:574 (Brazil)
6. Dorsum of abdomen uniformly colored . . . *aridus* Stål, 1869a:88
6. Dorsum of abdomen not uniformly colored 7
7. Apical area of hind wings transparent, basal area colored 8
7. Hind wings fuliginous, darker apically . . . *fuscipennis* Distant, 1906m:197 (Ecuador)
8. Basal area of hind wings green . . . *coloratus* Distant, 1906m:196 (Ecuador)
8. Basal area of hind wings dull yellow . . . *stigma* Fabricius, 1803a:58 (Brazil)

Calyptoproctus elegans Oliv.

This is a large species of *Calyptoproctus*. The general color of the head, the thorax,

the legs and the ventral side of the abdomen ochraceous buff, more or less marbled with fuscous. The tegmina rosy red at the base, translucent apically. The hind wings transparent. The abdomen above bluish-black with the posterior borders of the basal segments pale bluish-green fading to ochraceous, a pair of large spots of the same color on the sixth segment.

The crown about four times as broad as long, nearly parallel margined; the frons broad, distinctly ampliate dorsad; central areolet indistinct. Pronotum with a strong median carina which ends in a strong transverse ruga posteriorly; post-ocular incisions deep. Sixth dorsal abdominal segment produced, nearly as long as the basal segments combined; tricarinate, the carinae parallel.

This species was described from Guiana and has been recorded from Brazil and Panama.

Calyptoproctus marmoratus Spin.

This species was described from "Amerique septentrionale," and, so far as I am aware, has not been definitely recorded since the original description except when confused with *Alphina glauca* Metc., which is an entirely different species (Metcalf, 1938a:348). Since the present specimen agrees more closely with the original description of *marmoratus* than any thing else, I have concluded to place it here for the present, at least, although this specimen is somewhat larger than the original description would indicate. This species differs chiefly from *elegans* in coloration; structurally the chief differences that I note are the more elongate sixth abdominal segment of the female which in *marmoratus* is about as long as segments two to five inclusive, whereas in *elegans* only about as long as segments three to five inclusive. In *elegans* the sixth segment is rather broad, broadly rounded on the caudal margin, whereas in *marmoratus* the sixth segment is more nearly triangular with the caudal margin obtuse between the intermediate carinae. In *marmoratus* the frons, crown, pronotum and mesonotum are obscurely irrorate. The tegmina are grayish-fuscous with heavy markings of blackish-fuscous, especially on the apical area. In *elegans* the frons is not irrorate and the wings are bright rosy red on the basal third with the apical two-thirds translucent; veins and cross veinlets rosy red and the whole area sparsely spotted with brownish-fuscous.

Enchophora Spinola.

Enchophora tuba Germar.

This species has previously been synonymized with *recurva* Oliver. For the present, however, I prefer to keep them separate. In *tuba* the dorsal surface of the abdomen is bright red like the basal field of the hind wings. The cephalic process is slender and directed upward at an angle of about 45 degrees, then bent sharply horizontal with apex tripartate and erect.

Family DICTYOPHARIDAE.

Although the present collection is small, containing only 7 species, it enables me to straighten out some previous errors.

Dictyophara Germar, 1833a:175.

Logotype *Dictyophara europaea* Linnaeus.

This is a large genus with some 85 or 90 species recorded from most of the major regions of the world. Three species are included in the present collection.

In this genus there is a definite cephalic process which may be elongate cylindric or short and pyramidal, with the crown either oblong, with the lateral carinae nearly parallel, or triangular with the lateral carinae converging. The tegmina are elongate, transparent, with characteristic venation with the apical portion reticulate and the basal area without cross veins. In the basal area, there are 3 main veins, subcosta and radius united to the apical area where they divide, subcosta forming a distinct nodal area with usually 3 to 5 or more cells; media and cubitus both branch before the apical area.

Dictyophara brachyrhina Walker.

(Pl. II, fig. 2; Pl. III, fig. 12).

This species was described from Colombia and is also known from Guatemala, Ecuador and Panama. There are a number of specimens in the present collections from Bartica District, British Guiana.

This species may be recognized by the broad cephalic process which is about twice as long as broad and nearly parallel-sided. Most of the specimens are dull ochraceous orange but a few have the carinae and the veins of the tegmina bright grass green.

The male genitalia are illustrated. They are of the typical dictyopharid pattern with the terminal filaments of the genital styles rather broad and bent at right angles to the base.

Dictyophara platyrhina Walker.

(Pl. III, figs. 8, 13, 14).

This is a rather large species of *Dictyophara* with an elongate cephalic process which is about two and one-half times as long as the width between the eyes; the lateral carinae nearly parallel to the apex; the frons is elongate, somewhat spatulate, with the lateral margin somewhat angulate just above the clypeal suture. Male genitalia not of the typical dictyopharid pattern; genital styles broad and flat, somewhat bilobed apically without the elongate terminal filament characteristic of the other

species of *Dictyophara* known to me; genital plates broad, somewhat triangular in form, with the dorsal angle produced spine-like. Aedaegus biramose, long and slender; the apices somewhat recurved and spine like.

Dictyophara beebei, n. sp.

(Pl. II, fig. 1; Pl. III, fig. 3).

This species resembles a small *Dictyophara obtusifrons* but the genitalia are entirely different. Crown elongate, triangular; the lateral carinae converging toward the apex. The lateral margins of the frons visible from above, giving the dorsal aspect a somewhat spatulate appearance; frons rather short, barely narrowed between the eyes; the lateral margins not expanded toward the clypeal border. Tegmina elongate, narrow; stigma with three cells, elongate, slender. The genital plates, viewed from the venter, are elongate, narrow, obtuse caudad; viewed from the side, they are broadly triangular with the dorsal angle produced into a broad, obtuse tooth. The genital styles are broad and flat without a terminal filament. Aedaegus long and slender, biramose, with the apical processes bent and directed cephalad.

Holotype: ♂; February 29, 1924, Kartabo, Bartica District, British Guiana.

Allotype: ♀; March 11, 1924, Kartabo, Bartica District, British Guiana.

Paratypes: 2 ♂ ♂; and 1 ♀; all from Kartabo.

Taosa Distant, 1906n: 355.

Orthotype *Taosa suturalis* Germ.

This genus includes 15 species from Central and South America. They are all short-headed dictyopharids with the crown usually broader than long or at most as long as broad, slightly projecting in front of the eyes, with definite lateral areolets and a definite carina between the crown and the face; face tricarinate, ampliate ventrad; tegmina with only a few cross veins in the apical area.

This genus was established by Distant for the single species, *Flata suturalis*, which had previously been placed in various genera. Later, in 1913, Kirkaldy (1913a:14) established a new subgenus *Cuernavaca* of the genus *Dictyophara* to include the *Fulgora herbida* Walker. This, I believe, should be retained as a subgenus of *Taosa* to include those forms which have the crown about as long as wide, definitely projecting in front of the eyes. The typical *Taosa* would then include those forms which have the crown nearly twice as broad as long, not projecting in front of the eyes.

Taosa muiri, n. sp.

(Pl. II, figs. 3, 7; Pl. III, fig. 2).

There are 2 species in this collection which are assigned to this genus. In general appearance, this species resembles *bimaculifrons* Muir, but the genitalia and coloration are entirely different. In coloration it resembles *viridis* Muir, but the crown is much narrower than in *viridis*.

Crown rather small, about one and one-half times as broad as its median length; without a median carina; lateral areolets large; frons rather short and broad; median carina distinct; intermediate carinae indistinct; median carina of the pronotum short but well elevated; carinae of the mesonotum very distinct; the intermediate carinae continued as the lateral margins of the mesonotum. Nodal area of the tegmina with three cells. Hind tibiae with 3 lateral spines. Genital styles elongate, slender, with the apicies elongate, somewhat curved and overlapping.

General color green with the crown and mesonotum more or less clouded with raw sienna, with 2 elongate, shining, black spots on the intermediate carina of the frons near the dorsal margin; a small black spot on the lateral margins of the mesonotum near the base of the tegmina; 3 black spots on the lateral areas of the metathorax and a large, black, elongate stripe on the hind coxae.

Length to apex of tegmina 12 mm.

Holotype: ♂; Bartica District, British Guiana.

Taosa (Cuernavaca) paraherbida Muir.

(Pl. II, fig. 11).

There is a single female specimen of this species in the present collection. It agrees with all the essential characters of this species save color. The general color of body, including legs and veins of the tegmina, is dull raw sienna with the eyes dull brown.

Hydriena Melichar, 1912a:50.

Orthotype *Hydriena distanti* Mel.

This genus was established by Melichar (1912a:50) for a single species from Guiana. This is one of the short-headed dictyopharid genera with the crown about three times as long as broad, projecting about a third of its length in front of the eye; lateral margins nearly parallel to near the apex; separated from frons by a distinct transverse carina. Frons elongate with 2 parallel intermediate carinae; narrow between the eyes, gradually widening to the clypeal border, median carina wanting. Clypeus with a median carina. Pronotum short and broad; anterior margin projecting between the eyes; posterior margin deeply incised; lateral margin with 2 parallel carinae. Mesonotum large with 3 nearly parallel carinae. Tegmina of the usual dictyopharid pattern with few cross veins in the apical area.

Hydriena distanti Mel.

(Pl. II, fig. 14; Pl. III, figs. 7, 9, 11).

This species was described from Bartica, British Guiana, and Paramaribo, Dutch Guiana. There is a small series in the present collection from Kartabo.

The general color of fresh specimens is dull green with the intermediate carinae of the frons rust red; the other carinae of the body and the segments narrowly margined with black; other areas of the body marked with black or blackish brown or brown as follows: a large, shining, black spot at the dorsal margin of the frons, a spot in the lateral field of the pronotum, 2 irregular spots in the lateral fields of the mesonotum, and the posterior border of each abdominal segment. Tegmina smoky transparent, veins and cross veins brown. Length to the apex of the tegmina 15 to 18 mm.

Lappida Amyot and Serville, 1843a:505.

Haplotype *Lappida proboscidea* Spin.

This genus may be recognized by the elongate, slender cephalic process which is usually expanded apically. The tegmina are transparent with supernumerary longitudinal veins but not many cross veins; the stigma usually brightly colored with 3 or 4 cells. The anterior tibiae are elongate, longer than the femora; the hind tibiae have 4 or 5 spines.

There are 14 species known from Mexico, Central and South America.

There is in the present collection a single female specimen of this genus which resembles *fusca* Metc. (Pl. III, fig. 4.) in general body structure, especially in the short, slender cephalic process. The coloration, however, is entirely different, and I place the present specimen in this species with some hesitation. The general color of the present specimen is rufus orange with the cephalic process green except the carinae which are blackish; the median and lateral areas of the frons are green with the intermediate carinae and the lateral carinae rufus orange.

Family TROPIDUCHIDAE.

This is a small family of fulgorids containing about 80 genera and approximately 200 species. Many of the genera include only a single species. A majority of the described species come from the eastern hemisphere. However, the family is fairly well represented in tropical America, a few species reaching the southern United States. The present collection contains but a single species representing the well known genus *Alcestis*.

There is usually a distinct suture which restricts the posterior angle of the mesonotum. In most genera there is a transverse row of cross veins or a cross line across the tegmina on the apical third. The head is various, sometimes with and sometimes without a cephalic process. The former genera superficially resemble members of the family Dictyopharidae but may be readily distinguished by the small second joint of the hind tarsi, with a spine on each side.

Alcestis Stål, 1862e:11.

Haplotype *Alcestis pallescens* Stål.

This is a genus of short headed and broad winged tropiduchids. The crown is short, usually about twice as broad as its median length. Frons about twice as long as broad; the lateral margin slightly arched and carinate. The median carina very broad. Tegmina broad, costal margin broadly rounded; venation distinct; subapical line indistinct; costa separated from the costal margin for a short distance at the base; costal vein united to the costal margin by three or more branches; subcosta and radius united for a short distance beyond the basal cell; subcosta with numerous branches united to the costal margin; radius, media and cubitus branching at about the same level; radius into 2 main branches, media into 3 main branches, and cubitus into 2 main branches.

Nine species are known from Central and South America.

Alcestis surinamensis Schmidt.

(Pl. II, figs. 8, 15; Pl. III, figs. 1, 6, 10).

This species was described from Surinam and Brazil. There are 4 specimens in the present collection that agree in all essential details. The crown is about twice as broad as long. Frons elongate; the median carina thick. Costa with 3 or 4 branches to the costal border; the basal cell elongate, about three times as long as broad; the subapical line wanting. The male genitalia are illustrated for the guidance of future students.

Family FLATIDAE.

This is a large family of fulgorids with approximately 175 genera and some 865 described species. This family has a world wide distribution and the number of species to be found in tropical regions of the world is beyond present calculations, if the small samples which I have seen from these regions is any indication of what real systematic collecting would reveal.

Poekilloptera Latreille, 1796a:90.

Haplotype *Poekilloptera phalaenoides* Linn.

Melichar 1923a:22 includes 4 species in this genus. In addition 4 other species have been assigned to this genus by other authors. All the species in this genus are fairly large flatids from 15 to 30 mm. in length to the apex of the tegmina. The tegmina vary from light buff to ochraceous orange in

color with a number of black spots in the cells.

Poekilloptera phalaenoides Linnaeus.

This common and very variable species is widely distributed in the Americas, ranging from Mexico through Central America to Colombia, Venezuela, Peru, Bolivia and as far south as Rio de Janeiro, Brazil. It is very variable in size and coloration and no less than 4 varieties have been recognized and described. This species has not been listed from British Guiana previously, but there is in the present collection a series of specimens from Kartabo. The largest females in this series are somewhat intermediate between the varieties *aperta* Melichar and *parca* Jac. while the smaller males represent the typical variety *phalaenoides*.

Leptormenis Melichar, 1923a:65.

Orthotype *Leptormenis relicta* Fabr.

This genus may be recognized from the other genera of ormenids with two subapical lines by the fact that the first subapical line is undulate and connected with the costal vein; the second subapical line is regular, not connected with the costal vein; costal margin broad, broader than the costal cell. Crown broad, broader than long.

Leptormenis confusa Melichar.

There is a single specimen in the present collection which agrees in all essential details with Melichar's original description of this species which was based on a specimen from French Guiana. Melichar did not include this species in his catalog of the species of flatids in 1923. However, since the specimen before us agrees with the original description and comes from the same general region, I have included it under this name.

Ormenis Stål, 1862e:68.

Logotype *Ormenis perfecta* Walk.

This is a genus of some 30 known species. I believe that it should be confined to species from the western hemisphere, although 2 species from the eastern hemisphere have been assigned to it. The chief distinguishing characters are the following: face broader than long; tegmina rather narrow elongate with the costal membrane wider than the costal cell; 2 regular subapical lines about equidistant from each other and from the apical border, both connected with the costal vein; the first subapical line slightly undulate; the longitudinal veins beyond the second subapical line mostly bifurcate.

Ormenis retusa Fabr.

This species was described from French Guiana and there is a single specimen in the present collection which I place here. It may be recognized by its small size, about 10 mm. in length, with the usual generic characters and in general of a pale greenish color with the wings strongly powdered with white wax and the veins and cross veins dull orchraceous orange.

Anormenis Melichar, 1923a:68.

Orthotype *Anormenis tortricina* Germ.

This genus was described to include those American species of the *Ormenis* group which have a very short, broad crown and a forehead as long as or longer than broad with the median carina indistinct or indicated dorsad only. The tegmina have 2 nearly parallel subapical lines which may be equidistant from each other or closer to each other than the second is to the apical margin, and the costal membrane is usually broader than the costal cell. The present collection contains representatives of 2 species.

Anormenis media Melichar.

This small species was described from Colombia and has been recognized from Panama. The present collection contains 3 specimens from Kartabo which seem to agree in all essential details. It is a small, pale greenish-white species with very irregular subapical lines.

Anormenis nigrolimbata Fowler.

This species was described from Panama and there is a single specimen in the present collection which agrees in most of the details. The face is longer than broad; the tegmina with 2 rather indistinct subapical lines which are about equidistant from each other and the apical border. The general color is pale ivory yellow with a distinct black spot beyond the apex of the clavus and the apical border with quadrate fuscous spots in the cells and the whole apical border clouded with pale smoky brown.

Melormenis Metcalf, 1938a:395.

Orthotype *Melormenis quadripunctata* Fabricius.

This genus has a wide distribution from eastern North America through Mexico, Central America and the West Indies to Brazil and Argentina.

Melormenis may be characterized as follows: face longer than broad, with a fairly distinct median carina; tegmina with a single subapical line some distance from the apical border.

Melormenis regularis Fowl.

This is a small bright green species with the tegmina narrowly infuscated along the costal and apical margins; the tegmina are

elongate and narrow, with the face longer than broad.

This species was described from Mexico. The present collection contains a single specimen from Bartica. This would extend the range of the species to cover most of the Caribbean region.

Eurocerus, n. gen.

Orthotype *Eurocerus sinuata* n. sp.

This genus belongs to that group of the tribe Selizini which has the sutural and apical margins sinuate, not rounded as in the other genera of this group. It differs also from the other genera in this group in having the venation much more irregular and heavier and in having the subapical line very irregular. It differs from *Neocerus* Melichar in having the dorsal margin of the face nearly straight, not triangularly incised, and in having 2 spines on the posterior tibiae. From *Eurocalia* Van Duzee it differs in having the crown short with the lateral margins flaring anteriorly. The base of the crown is overlapped by the extended anterior margin of the pronotum. It differs from both of these genera also in having the costal margin of the hind wings sinuate.

Eurocerus sinuata n. sp.

(Pl. II, figs. 4, 9).

Crown about twice as broad as its median length; longer than the pronotum. Frons slightly broader than the median length; the lateral margin broadly rounded and then constricted to the narrower clypeus. The dorsal margin nearly straight, not deeply incised as in *Neocerus*. Clypeus broadly inserted in the frons.

General color ochraceous buff marked with black and dark fuscous. The dorsal margin of the crown is blackish shading to fuscous laterad and ventrad. This blackish mark is continued as a median stripe across the crown and as a dark cloud across the pronotum and mesontum. Tegmina ochraceous buff marked with spots and clouds of black and blackish-fuscous. The costal margin is marked with dark and the apical third of the tegmina is chiefly dark. The tubercules on the clavus are chiefly black. Hing wings fuscous. Length to apex of the tegmina 8.5 mm.

Described from a single female from Kartabo.

Holotype No. 1961, September 12, 1919.

Carthaeomorpha Melichar, 1902a:33.

Logotype *Carthaeomorpha rufipes* Mel.

Crown broad and short, nearly four times as broad as long; anterior and posterior margins nearly parallel, broadly curved; with a distinct carina separating the crown from forehead. Forehead slightly longer than broad; flat, lateral margins strongly elevated, broadly curved; median carina distinct dorsad. Tegmina large; apex truncate; sutural angle strongly produced; venation reticulate; longitudinal veins distinct; costal cell broader than the costal membrane; media branched before the first cubital sector. Hind tibiae with 2 spines on the apical third.

Carthaeomorpha rufipes Mel.

General color bright grass green fading to ochraceous orange. Transverse carina of the head, anterior, intermediate, and posterior tarsi tinged with bright red. Commisural margin narrowly fuscous; conspicuous row of fuscous granules along the second claval vein; 2 small black dots in the middle of the corium, each surrounded by a rust red border.

This species was described from Colombia and has been recorded from Panama. The present specimen will extend its range eastward in the Caribbean region.

Flatoidinus Melichar, 1923a:117.

Orthotype *Poeciliptera convivus* Stål.

In this genus the crown is broader than long but the head is narrower than the pronotum. The pronotum is about as long as the crown with the mesonotum broader than long; forehead elongate; tegmina elongate; costal margin about twice as broad as costal cell; 2 irregular subapical lines, the second short; hind tibiae with 2 spines.

Flatoidinus kartaboensis, n. sp.

(Pl. III, figs. 5, 15).

This is a very variable but distinct species with costal margin of the tegmina faintly undulate; the crown conically produced on the median area only. While the colors are very variable, the following markings seem to be constant: a blackish spot at the apex of the head, a brownish triangular spot at about the middle of the clavus which extends almost completely across the clavus. Crown about twice as broad as long; the median area produced in a broad flat cone; the lateral carinae projecting distinctly in front of the compound eyes. Frons elongate, the lateral margin strongly elevated; median carina wanting; pronotum with the median area broad and flat almost semi-circular in outline; the posterior margin shallowly incised; mesonotum with the median area strongly elevated, bordered by heavy carina. Tegmina elongate, narrow, somewhat narrowed apically; the costal margin softly undulate; the 2 subapical lines nearly equidistant from each other and the apical margin; costal membrane about twice as broad as the greatest width of the costal cell; venation fairly distinct; hind tibiae with 2 spines.

Color very variable, ranging from dull

ivory white to dull olive green. Dark markings also very variable. In some specimens the head, pronotum, mesonotum and tegmina are heavily dotted with fuscous and black. In other specimens the dark markings are almost completely wanting. The round fuscous spot at the apex of the head, 2 pairs of spots on the lateral fields of the mesonotum and the brownish triangle at the middle of the clavus seem to be constant.

Length to the apex of the tegmina 8 mm.

Holotype: ♂; Kartabo, Bartica District, British Guiana, July 17, 1922.

Allotype: ♀; Kartabo, Bartica District, British Guiana, April 2, 1924.

Paratypes: 1 ♂; April 5, 1920; 1 ♀; March 8, 1924, all from Kartabo.

Family ACANALONIIDAE.

This is a small family of about 13 genera and 62 species. The species thus far described are known only from North and South America and Africa, a single species having been described from Christmas Island in the Indian Ocean.

In this family the tegmina are large, held vertical in repose. In this respect they resemble members of the family Flatidae. They differ from the Flatidae in lacking a costal area and in having the clavus not granulate. Acanalonids resemble issids somewhat but the tegmina are generally larger in the acanalonids; the hind tibiae are without spines.

Acanalonia Spinola, 1839b:447.

Haplotype *Acanalonia servillei* Spin.

This is the well known North and South American genus with about 45 or 50 species, many of which are widely distributed in North and South America. Some species range from the southern United States to Brazil. A number of species have been recorded previously from Mexico, Central America, West Indies and Brazil, but none have heretofore been recorded from British Guiana.

Head, including the eyes, narrower than the pronotum; crown broad, median length much shorter than the width between the eyes, usually gently rounding into the face. The anterior margin of the crown usually broadly rounded, sometimes somewhat angulate. Face with the lateral margin usually broadly rounded and sharply carinate. Median carina usually present, sometimes very conspicuous. Clypeus without lateral carinae. Pronotum broad and short with anterior margin sometimes broadly projecting between the eyes. The posterior margin usually broadly, angulately emarginate. Mesonotum large; tegmina large with costal and posterior margins broadly rounded. The entire surface of the tegmina closely reticulate with the longitudinal veins conspicuous at the base only.

Acanalonia umbraculata Fabr.

This well known South American species has been widely recorded in Brazil from as far south as Rio de Janeiro to the Amazon Valley and in Bolivia. There is a small series in the present collection from Bartica, British Guiana.

The general color is green shading to cinnamon buff on the thorax, head and legs; eyes brown, lateral carinae of the face brown; tegmina with a row of marginal brown dashes starting near the apex of subcosta and extending around the apical margin and fading out on the commisural margin of the clavus.

Length to the apex of the tegmina 10 to 11 mm.

Family ISSIDAE.

The present collection contains 2 species from this family which I have identified as *Thionia coriacea* Fabr. and *Colpoptera marginalis* Burm.

Thionia Stål.

Thionia coriacea Fabr.

This species has been recorded previously from Brazil and Panama. It is a small dark-colored species about 8.5 mm. in length, broadly oval with a crown about twice as broad as long. The forehead is subquadrate and there are no conspicuous markings of any kind.

There is a single teneral specimen of what I believe is this species. The species may be recognized in its fully developed condition by its dark color, by the broad crown, and by the pale stigmatal spot.

Colpoptera Burmeister.

Colpoptera marginalis Burm.

This species has been recorded previously from Mexico and Central America. So far as I know, this is the first record of this species from South America.

Family NOGODINIDAE.

This family has been included previously as a sub-family of the Ricaniidae but as has been pointed out by Muir, it is more closely related to the Issidae. Only a single species is included in the present collection.

Nogodina Stål.

Haplotype *Flata reticulata* Fabr.

In this genus the forehead is longer than broad with the lateral margins elevated and a distinct percurrent median carina. The tegmina are large; the costal membrane is crossed by numerous cross veins. There is a single subapical line parallel to the apical margin.

Nogodina reticulata Fabr.

Reticulata has a wide range from Central America to Brazil. The typical form is well represented in the present collection.

Family LOPHOPIDAE.

This is a small family comprising about 37 genera and 180 described species. All the species are confined to the eastern hemisphere with the exception noted below.

Hesticus Walk., 1862e:305.

Haplotype *Hesticus pictus* Walk.

This genus is a somewhat anomalous one. It was placed by Walker in the family Dictyopharidae. It has a general resemblance to certain members of the family Tropiduchidae, especially in the well developed cross lines on the apical third of the tegmina. In the characters of the hind tarsi, however, it clearly belongs in the family Lophopidae where Muir has placed it. In this genus the head is narrower than the pronotum. The crown is longer than broad, bounded anteriorly by the branches of the median carina of the frons; frons narrow, elongate, the lateral carinae strongly elevated, especially ventrad, median carina distinct especially dorsad where it branches, a very indistinct transverse carina on the dorsal part of the frons. Clypeus large, lateral carinae strongly, rotundately elevated dorsad. Antennae elongate with second segment about four times as long as the first segment; sides parallel. Pronotum short and broad, somewhat overlapping the crown; posterior margin incised; median and strongly curving lateral carinae distinct. Mesonotum large, tricarinate. Tegmina elongate, transparent; subcosta and radius united to near the first cross line where they branch in what appears to be radius 1 plus subcosta and radial sector; subcosta with about 4 branches to the costal margin, forming an indefinite stigma; radius 1 with 3 or 4 branches to the costal margin; radial sector branching at the cross lines into 2 branches; media unbranched before the cross vein where it branches into 3 distinct branches; subcosta 1 branching before the cross line; cross veins in the apical third of the tegmina forming a distinct subapical line. Fore femora and tibiae broadly flattened; tarsi slender; middle and hind legs elongate; hind tibiae with 3 spines laterad and irregular rows of spines at the apex; hind basi-tarsus elongate, slender; second segment of hind tarsus long, without spines.

Hesticus pictus Walk.

(Pl. II, figs. 5, 6, 10).

This species was described from Brazil. There is a single specimen in the present collection from Kartabo. The general color of the head and thorax is pale orange yellow. The abdomen is bright red and the fore femora and tibiae are also bright red in color. The eyes and antennae are chiefly scarlet with a patch of the same color in front of the eyes and on the lateral fields of the pronotum. There is an indefinite pale scarlet stripe along the median line of the mesonotum. Sub-basal area of the clypeus is fuscous. This color extends across the sides of the pro- and mesonotum toward the tegulae. The apices of all the femora and tibiae are clouded with fuscous. In the tegminae, the stigmatal spot is blackish-fuscous as are the two cross lines and a large area on the apical margin.

Appendix.

Field Data of the Study Material.

Bothriocera bicornis.

4 specimens: 130 (May 5); 201626 (May 12); 20918 (July 15); 20404 (Oct. 22).

Olarus beebei n. sp.

4 specimens: Holotype, 241017 (March 10); Allotype, 221148 (March 27); Paratypes, 221149 (May 30); 221150 (Oct. 8).

Pintalia castanea n. sp.

1 specimen: Holotype, 241018 (April 3).

Eucanyra bifurcata n. sp.

1 specimen: Holotype, 201628 (May 6).

Mysidia squamigera.

1 specimen: 241019 (March 6).

Mysidia costata.

1 specimen: 201627 (Oct. 22).

Mysidia rubra n. sp.

1 specimen: Holotype, 20572 (May 14).

Neocenchrea ochracea n. sp.

1 specimen: Holotype, 241020 (March 4).

Syntames serratus n. sp.

1 specimen: Holotype, 241021 (March 28).

Anotia rubescens.

1 specimen: 201629 (July 7).

Cathedra serrata.

1 specimen: 241022 (May 15) (Color Plate 739).

Fulgora laternaria.

1 specimen: 201638 (June 18).

Aracynthus sanguineus.

1 specimen: 221151 (July 4).

Lystra lanata.

22 specimens: 221155 (Feb. 15); 241023 (March 4); 241024 (March 4); 221152

(March 18); 221153 (April 16); 1957 (June 6); 201630 (June 9); 241025 (June 11); 201632 (June 22); 201633 (June 22); 1958 (June 30); 1959 (July 4); 221156, 221157, 221158, 221159, 221160 (July 10); 2262 (Aug. 2); 221154 (Aug. 6); 201631 (Aug. 23); 20545 (Aug. 23); 20567 (Aug. 23).

Calyptoproctus elegans.

2 specimens; 1960 (June 24); Hemip. 282 (Feb. 4).

Calyptoproctus marmoratus.

1 specimen: 221161 (April 2).

Enchophora tuba.

1 specimen: 22158 (July 6).

Dictyophara brachyrhina.

5 specimens: Hemip. 16-301 (Feb. 16); 241026 (May 2); 221162 (May 18); 241027 (June 1); 221163 (May 18).

Dictyophara platyrhina.

11 specimens: 241028 (March 3); 221164 (March 17); 221165 (April 1); 241029 (May 6); 221166 (July 18); 221167 (July 19); 221168 (Aug. 4); 221169 (Aug. 4); 2067 (Sept. 1); 201634 (Oct. 21); 20330 (Oct. 6).

Dictyophara beebei n. sp.

4 specimens: Holotype, 241030 (Feb. 29); Allotype, 241031 (March 11); Paratypes 241032 (March 10); 241033 (July 19).

Taosa muiri n. sp.

1 specimen: Holotype, 16-131 (March 4).

Taosa (Cuernavaca) paraherbida.

1 specimen: Hemip. 16-328 (March 10).

Hydriena distanti.

3 specimens: 241036 (May 16); 241034 (April 24); 241035 (July 25).

Lappida fusca.

1 specimen: 221186 (May 20).

Alcestis surinamensis.

3 specimens: 221171 (May 24); 221170 (Sept. 2); 20979 (Nov. 5).

Poekilloptera phalaenoides.

6 specimens: (Georgetown, 16245 (Feb. 12); 221172 (April 3); 221173 (April 3); 16251 (March 4); 241037 (May 3); 241038 (May 6).

Leptormenis confusa.

1 specimen: 221174 (March 31).

Ormenis retusa.

1 specimen: 241039 (April 18).

Anormenis media.

4 specimens: 221176 (March 29); 241049 (May 3); 221175 (Aug. 4); 221177 (Sept. 2).

Anormenis nigrolimbata.

1 specimen: 241047 (Feb. 29).

Melormenis regularis.

1 specimen: 241042 (April 6).

Eurocerus sinuata n. sp.

1 specimen: 1961 (Sept. 12).

Carthaeomorpha rufipes.

1 specimen: 221178 (May 29).

Flatoidinus kartaboensis n. sp.

3 specimens: Holotype, 221179 (July 11); Allotype, 221180 (April 2); Paratype, 201635 (June 5).

Acanalonia umbraculata.

3 specimens: 221182 (March 26); 221181 (March 29); 221183 (May 19).

Thionia coriacea.

2 specimens: 201636 (Aug. 14); 201637 (Aug. 14). Both 60 feet up trees.

Colpoptera marginalis.

1 specimen: 241043 (March 6).

Nogodina reticulata.

5 specimens: 221184 (March 20); 221185 (March 23); 241044 (May 6); 241045 (June 4); 216 (Aug. 3).

Hesticus pictus.

1 specimen: 24958 (May 10).

Bibliography.

Burmeister, H. C. C.

1835a. Handbuch der Entomologie, **2** (1): 1-396.

Crawford, D. L.

1914a. *Proc. United States Nat. Mus.*, **46**: 557-640; pls. 44-49.

Distant, W. L.

1906m. *Ann. Mag. Nat. Hist.*, (7) **18**:191-208.

Fabricius, J. C.

1803a. Systema Rhyngotorum secundum ordines, genera, species, adiectis synonymis, locis, observationibus, descriptionibus. **1803** :i-x, 1-314.

Fowler, W. W.

1904b. Biologia Centrali-Americana. **1**:85-108; pls. 10-11.

1905a. Biologia Centrali-Americana. **1**:125-139; pls. 13.

Germar, E. F.

1833a. *Rev. Ent. Silbermann*, **1**:174-184.

Kirby, W.

1821a. *Trans. Linn. Soc. London Zool.*, **13**: 12-23; pl. 1.

KIRKALDY, G. W.
1903b. *Entomologist,* **36**:179-181.

LATREILLE, P. A.
1796a. Précis des caractères génériques des insectes, disposés dans un ordre naturel. **1796**:i-xiii, 1-202.

LINNAEUS, C.
1767a. Systema Naturae per regna tria naturae, Editio duodecima, reformata. **1** (2):533-1327.

MELICHAR, L.
1901a. *Ann. Nat. Hofmus. Wien,* **16**:178-258.
1902a. *Ann. Nat. Hofmus. Wien,* **17**:1-123; pls. 1-9.
1912a. *Abh. Zool. 'Bot. Ges. Wien,* **7** (1):1-221; pls. 1-5.
1923a. Gen. Insect. **182**:1-185; pls. 1-2.

METCALF, Z. P.
1923a. *Jour. Elisha Mitchell Soc.,* **38**:139-230; pls. 38-70.
1938a. *Bull. Mus. Comp. Zool. Harvard Coll.,* **82**:277-423; pls. 1-23.

OLIVIER, G. A.
1791a. Encyclopédie méthodique histoire naturelle insectes. **6**:561-577.

SCHMIDT, E.
1905b. *Stett. Ent. Zeit.* **66**:332-342.

SPINOLA, M.
1839a. *Ann. Soc. Ent. France,* **8**:133-337; pls. 1-7, i.e. 10-16.

STÅL, C.
1854b. *Öfv. Svenska Vet. Akad. Förh.,* **11**: 231-255.
1862e. *Handl. Svenska Vet. Akad.,* **3** (6):1-75.
1866a. Hemiptera Africana **4**:1-276; pl. 1.

UHLER, P. R.
1895a. *Proc. Zool. Soc. London,* **1895**:55-84.

WALKER, F.
1858b. List of the specimens of Homopterous insects in the collection of the British Museum. **1858**:1-307.

WESTWOOD, J. O.
1840d. *Proc. Linn. Soc. London,* **1**:82-85.

EXPLANATION OF THE PLATES.

Plate I.

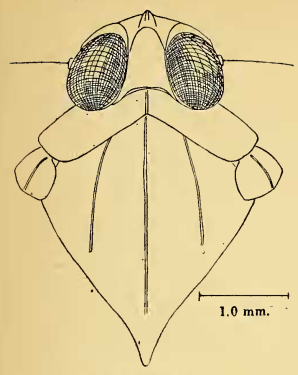
Fig. 1. *Oliarus beebei* n. sp. Dorsal view of head and thorax.
Fig. 2. *Oliarus beebei* n. sp. Ventral view of ♂ genitalia.
Fig. 3. *Oliarus beebei* n. sp. Lateral view of ♂ genitalia.
Fig. 4. *Pintalia castanea* n. sp. Frontal view of head.
Fig. 5. *Pintalia castanea* n. sp. Dorsal view of head and thorax.
Fig. 6. *Pintalia castanea* n. sp. Lateral view of ♂ genitalia.
Fig. 7. *Pintalia castanea* n. sp. Ventral view of ♂ genitalia.
Fig. 8. *Eucanyra bifurcata* n. sp. Ventral view of ♂ genitalia.
Fig. 9. *Mysidia rubra* n. sp. Lateral view of ♂ genitalia.
Fig. 10. *Neocenchrea ochracea* n. sp. Dorsal view of head and thorax.
Fig. 11. *Neocenchrea ochracea* n. sp. Frontal view of head.
Fig. 12. *Syntames serratus* n. sp. Dorsal view of head and thorax.
Fig. 13. *Neocenchrea ochracea* n. sp. Ventral view of ♀ genitalia.
Fig. 14. *Syntames serratus* n. sp. Ventral view of ♀ genitalia.
Fig. 15. *Eucanyra bifurcata* n. sp. Lateral view of ♂ genitalia.

Plate II.

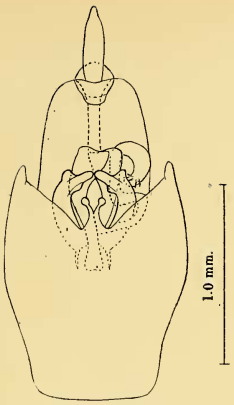
Fig. 1. *Dictyophara beebei* n. sp. Ventral view of ♂ genitalia.
Fig. 2. *Dictyophara brachyrhina* Walk. Lateral view of ♂ genitalia.
Fig. 3. *Taosa muiri* n. sp. Lateral view of ♂ genitalia.
Fig. 4. *Eurocerus sinuata* n. sp. Dorsal view of head and thorax.
Fig. 5. *Hesticus pictus* Walk. Ventral view of ♂ genitalia.
Fig. 6. *Hesticus pictus* Walk. Lateral view of ♂ genitalia.
Fig. 7. *Taosa muiri* n. sp. Ventral view of ♂ genitalia.
Fig. 8. *Alcestis surinamensis* Schmidt. Frontal view of head.
Fig. 9. *Eurocerus sinuata* n. sp. Right tegmen.
Fig. 10. *Hesticus pictus* Walk. Dorsal view of head and thorax.
Fig. 11. *Taosa paraherbida* Muir. Dorsal view of head and thorax.
Fig. 12. *Syntames serratus* n. sp. Frontal view of head.
Fig. 13. *Mysidia rubra* n. sp. Ventral view of ♂ genitalia.
Fig. 14. *Hydriena distanti* Mel. Ventral view of ♂ genitalia.
Fig. 15. *Alcestis surinamensis* Schmidt. Right tegmen.

Plate III.

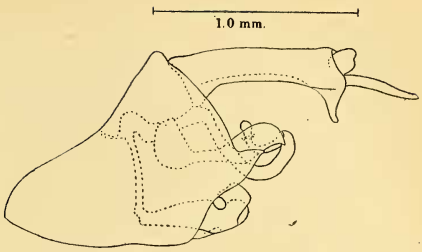
Fig. 1. *Alcestis surinamensis* Schmidt. Lateral view of ♂ genitalia.
Fig. 2. *Taosa muiri* n. sp. Dorsal view of head and thorax.
Fig. 3. *Dictyophara beebei* n. sp. Lateral view of ♂ genitalia.
Fig. 4. *Lappida fusca* n. sp. Dorsal view of head and thorax.
Fig. 5. *Flatoidinus kartaboensis* n. sp. Ventral view of ♂ genitalia.
Fig. 6. *Alcestis surinamensis* Schmidt. Ventral view of ♂ genitalia.
Fig. 7. *Hydriena distanti* Mel. Frontal view of head.
Fig. 8. *Dictyophara platyrhina* Walk. Ventral view of ♂ genitalia.
Fig. 9. *Hydriena distanti* Mel. Lateral view of ♂ genitalia.
Fig. 10. *Alcestis surinamensis* Schmidt. Dorsal view of head and thorax.
Fig. 11. *Hydriena distanti* Mel. Dorsal view of head and thorax.
Fig. 12. *Dictyophara brachyrhina* Walk. Ventral view of ♂ genitalia.
Fig. 13. *Dictyophara platyrhina* Walk. Dorsal view of head and thorax.
Fig. 14. *Dictyophara platyrhina* Walk. Lateral view of ♂ genitalia.
Fig. 15. *Flatoidinus kartaboensis* n. sp. Lateral view of ♂ genitalia.



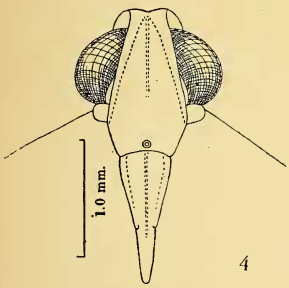
Oliarus beebei Metc.



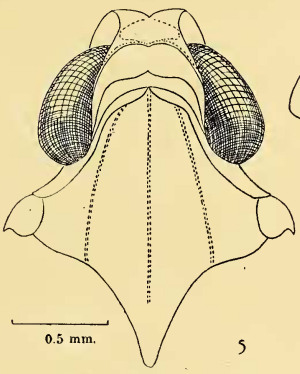
Oliarus beebei Metc. 2



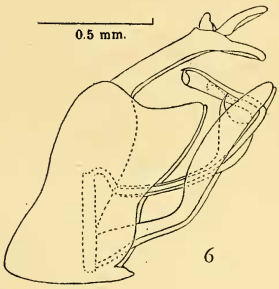
Oliarus beebei Metc. 3



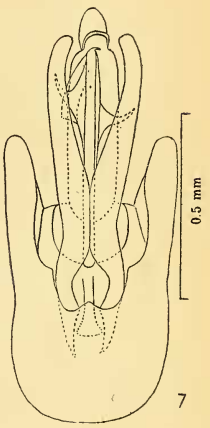
4 Pintalia castanea Metc.



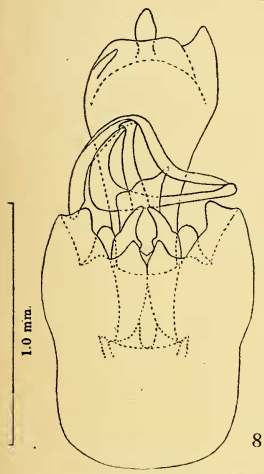
5 Pintalia castanea Metc.



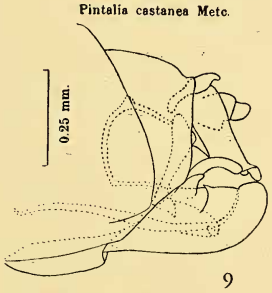
6 Pintalia castanea Metc.



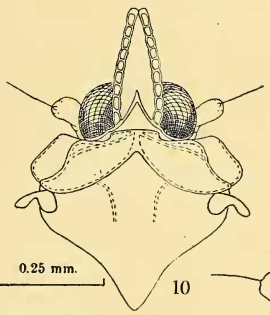
7 Pintalia castanea Metc.



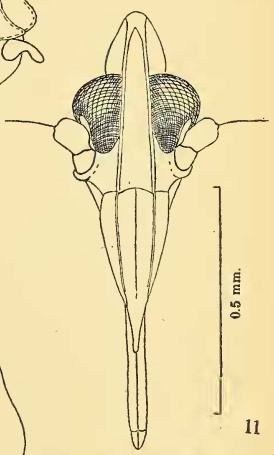
8 Eucanyra bifurcata Metc.



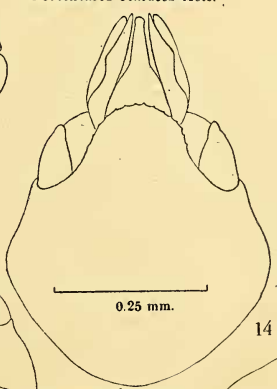
9 Mysidia rubra Metc.



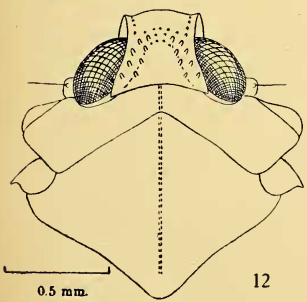
10 Neocenchrea ochracea Metc.



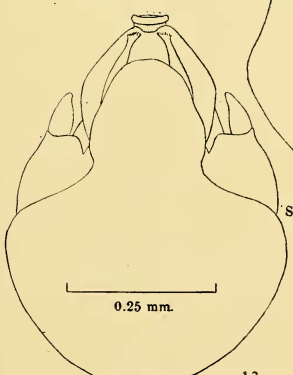
11 Neocenchrea ochracea Metc.



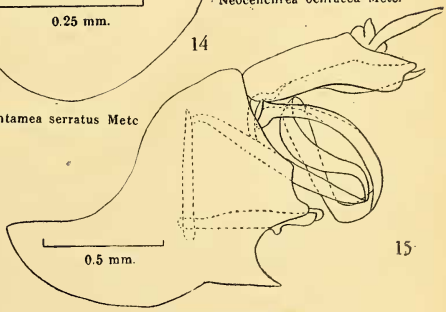
14 Syntamea serratus Metc



12 Syntames serratus Metc.



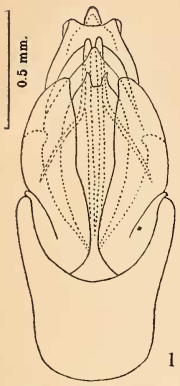
13 Neocenchrea ochracea Metc.



15 Eucanyra bifurcata Metc.

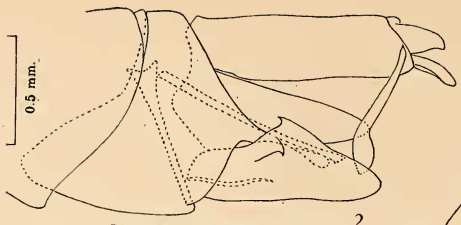
Sue D Sparks, del.

FULGOROIDEA (HOMOPTERA) OF KARTABO, BARTICA DISTRICT, BRITISH GUIANA

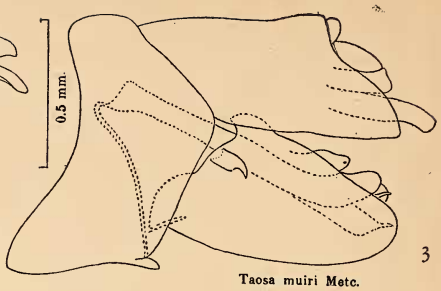


1

Dictyophara beebei Metc.

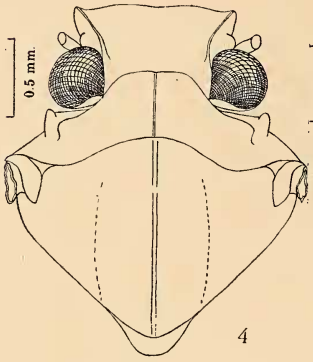


Dictyophara brachyrhina Walk. 2



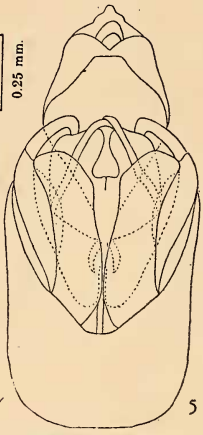
3

Taosa muiri Metc.



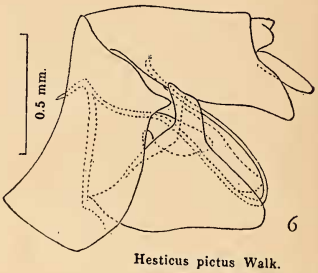
4

Eurocerus sinuata Metc



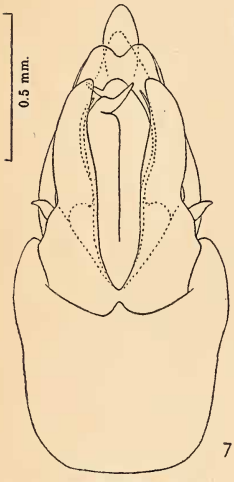
5

Hesticus pictus Walk.



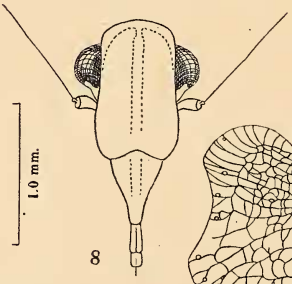
6

Hesticus pictus Walk.



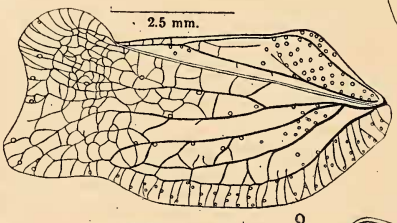
7

Taosa muiri Metc.



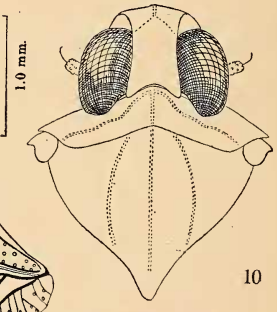
8

Alcestis surinamensis Schmidt



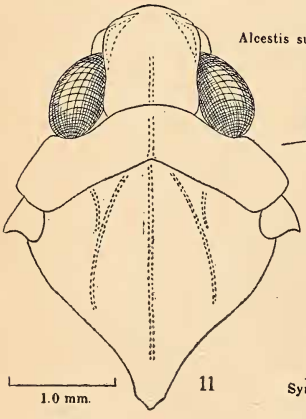
9

Eurocerus sinuata Metc.



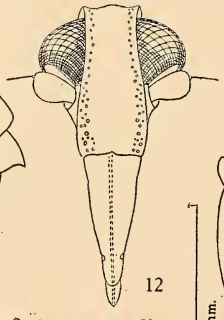
10

Hesticus pictus Walk.



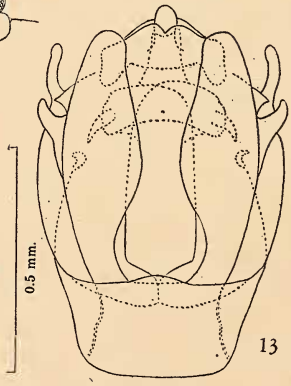
11

Taosa paraherbida Muir



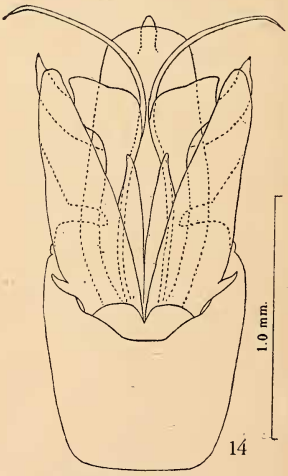
12

Syntames serratus Metc.



13

Mysidia rubra Metc.



14

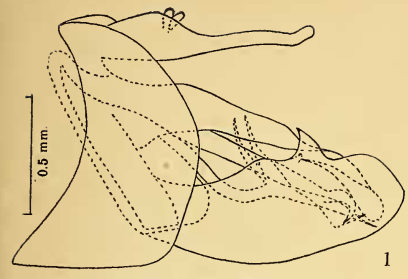
Hydriena distanti Mel.

15

Alcestis surinamensis Schmidt

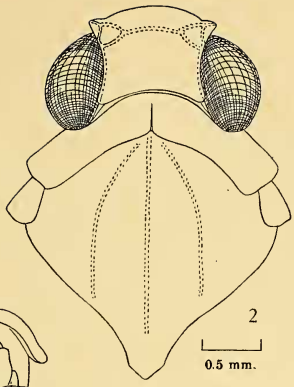
Sue D Sparks, del.

FULGOROIDEA (HOMOPTERA) OF KARTABO, BARTICA DISTRICT, BRITISH GUIANA



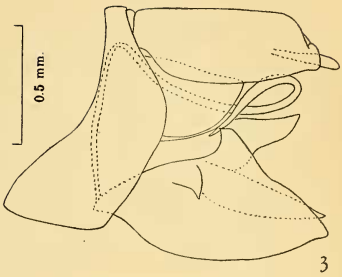
1

Alcestis surinamensis Schmidt



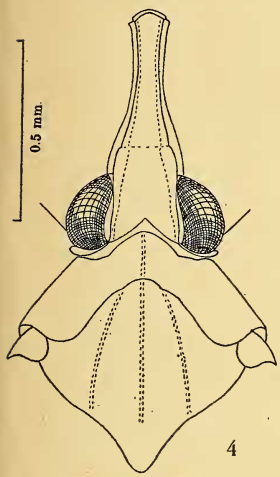
2

Taosa muiri Metc.



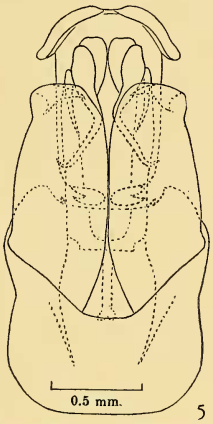
3

Dictyophara beebei Metc.



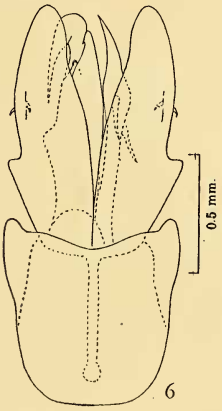
4

Lappida fusca Metc.



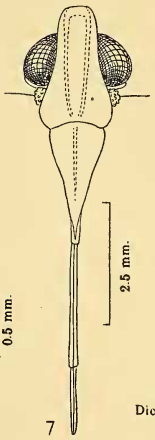
5

Flatoidinus kartaboensis Metc.



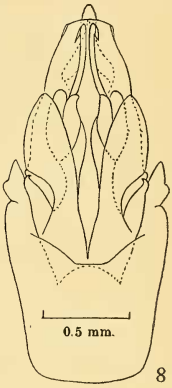
6

Alcestis surinamensis Schmidt



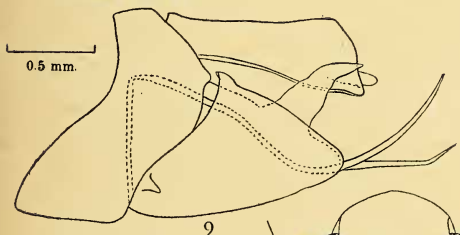
7

Hydriena distanti Mel.



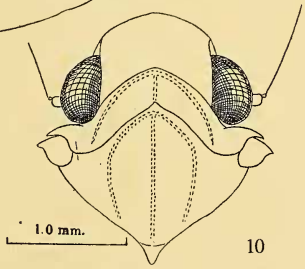
8

Dictyophara platyrhina Walk.



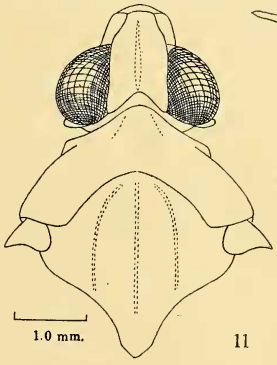
9

Hydriena distanti Mel.



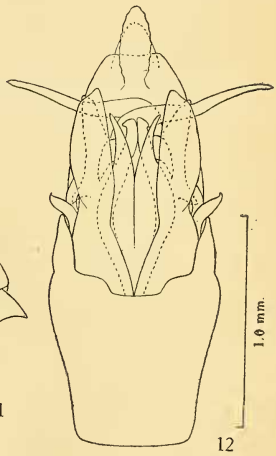
10

Alcestis surinamensis Schmidt



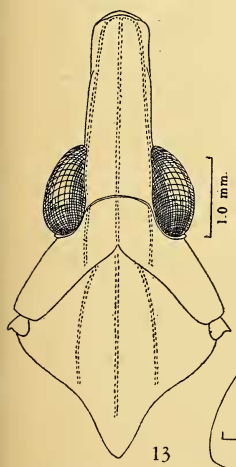
11

Hydriena distanti Mel.



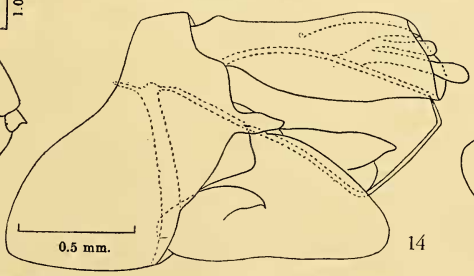
12

Dictyophara brachyrhina Walk.



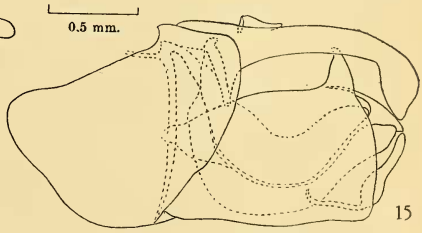
13

Dictyophara platyrhina Walk.



14

Dictyophara platyrhina Walk.



15

Flatoidinus kartaboensis Metc.

Sue D Sparks. del.

FULGOROIDEA (HOMOPTERA) OF KARTABO, BARTICA DISTRICT, BRITISH GUIANA